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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,347	01/30/2004	Andrej S. Mitrovic	245045US6YA	5237

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EXAMINER	
KIM, PAUL L	

ART UNIT	PAPER NUMBER
2857	

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/767,347	MITROVIC ET AL.	
	Examiner	Art Unit	
	Paul Kim	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *40* is/are allowed.

6)☒ Claim(s) *1,2,4-15,17-25,27,28,32-39 and 41* is/are rejected.

7)☒ Claim(s) *3,16,26 and 29-31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 41 is rejected under 35 U.S.C. 102(e) as being anticipated by Peterson et al.

Peterson et al teaches a method for monitoring consumption of a component comprising: emitting a radiation beam onto a first area of a component (fig. 1, part 108); detecting a portion of the beam that is refracted by the component (fig. 1, part 110); generating a radiation level signal based on a strength of the detected portion (fig. 1, part 114); determining an initial thickness of the component (fig. 3, part 302); and identifying a type of component based on the initial thickness (fig. 3, step 318).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 5, 8-10, 14, 15, 18, 20, 24, 25, 34-37, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borden et al in view of Card et al.

With regard to claims 1, 14, and 24, Borden et al teaches a system for monitoring a component comprising: a radiation source configured to emit a radiation beam onto a first area of a consumable component subject to erosion by a manufacturing process, the component having an initial thickness such that the component can withstand a plurality of process runs before the erosion requires replacement of the component (abstract; col. 7, lines 45+; col. 18, lines 20-30), a detecting unit configured to detect a portion of the radiation beam that is refracted by the component and to generate a radiation level signal based on a strength of the detected portion of the radiation (col. 6, lines 66+), and a control unit configured to determine the status of the component based on the radiation signal (fig. 1C, step 24). Borden et al, however, does not teach determining a "replacement" status of the component. Card et al teaches a method of determining states of a semiconductor manufacturing process, which determines replacement status of a component (col. 2, lines 52-63). It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Borden et al, so that a replacement status is determined, as taught by Card et al, in order to be able to determine when a component needs to be discarded.

With regard to claims 2, 15, and 25, Borden et al teaches determining a thickness of the component based on the signal and comparing the thickness to a predetermined value (col. 2, lines 25-44).

With regard to claims 5, 18, and 34, Borden et al teaches the radiation beam being an infrared beam (col. 21, lines 48-50).

With regard to claims 8 and 9, Borden et al teaches a data storage storing correlation data (fig. 1D, part 126).

With regard to claims 10, 20, and 37, Borden et al teaches the component comprising a semiconductor material (col. 1, lines 25-30).

With regard to claims 35 and 36, Borden et al teaches referring to stored correlation data to determine thickness of the component (col. 9, lines 17-20).

With regard to claim 39, Borden et al teaches determining an initial thickness of the component including determining a thickness of a recessed portion (fig. 1F-1H).

5. Claims 4, 12, 13, 17, 22, 23, 28, 33, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borden et al in view of Peterson et al.

With regard to claims 4, 17, and 33, Borden et al teaches the radiation beam being refracted off the surface of a component but does not specify the beam being refracted a first time by a first surface, transmitted through the component, reflected by a second surface, and refracted a second time by the first surface. Peterson et al teaches a method for determining layer thickness in which a beam is refracted a first time by a first surface, transmitted through the component, reflected by a second surface, and refracted a second time by the first surface (fig.1 & ¶ 26). It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Borden et al, so that the beam is transmitted and refracted off more than one surface,

as taught by Peterson et al, in order to improve versatility of the measuring device by being able to measure thickness of substrates with more than one different material.

With regard to claims 12, 22, and 38, Borden et al teaches one radiation source being used but does not specify using more than one infrared radiation source. However, it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8 (1977). It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Borden et al, so that more than one radiation and detecting unit is used, in order to improve accuracy of the measuring process.

With regard to claims 13, 23, and 28, Borden et al teaches the component having a first and second recessed portion (figs. 1F-1H) and properties of a layer being measured, but does not teach the control unit identifying at least one of a material, manufacturer, serial number, or type based on thickness. Peterson et al teaches a method for determining layer material of an integrated device (fig. 2, step 212 & ¶ 30). It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Borden et al, so that material of a device is determined, as taught by Peterson et al, so as to increase versatility of the measuring device by being able to perform more than one function.

6. Claims 6, 7, 11, 19, 21, 27, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borden et al in view of Usui et al.

With regard to claims 6, 7, 19, and 27, Borden et al teaches the radiation source and detecting unit being positioned within a processing chamber (fig. 1D) but does not specify the control unit being outside the processing chamber and the signals being transmitted wirelessly. Usui et al teaches the system using wireless means to transmit signals to the control unit located outside the processing chamber (¶ 95 and fig. 1). It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Borden et al, so that the power source is located outside the processing chamber, as taught by Usui et al, so as to be able to monitor a system from a long distance.

With regard to claims 11, 21, and 32, Borden et al does not specify the radiation source or detecting unit being configured to receive power from radiofrequency power in a plasma tool. Usui et al teaches the system configured to receive radiofrequency power in a plasma tool (¶ 36). It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Borden et al, so that the source or detecting unit receives power from radiofrequency power, as taught by Usui et al, so as to derive the benefit of receiving an efficient source of power.

Response to Arguments

7. Applicant's arguments with respect to claims 1, 2, 4-15, 17-25, 27, 28, 32-39, and 41 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

8. Claims 3, 16, 26, and 29-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 40 is allowed.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach a system for monitoring component consumption that comprises: radiation sources, detections units, and a control unit to determine initial thickness of a first recessed portion based on one radiation level, determine an initial thickness of a second recessed portion based on a second radiation level and identify at least one of a material, manufacturer, serial number, and type based on initial thicknesses of the first and second recessed portion.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Kim whose telephone number is 571-272-2217. The examiner can normally be reached on Monday-Thursday 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

PK
November 23, 2005

MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800